REMARKS

Please reconsider the application in view of the above amendments and the following remarks. Applicant thanks the Examiner for carefully considering this application.

Disposition of Claims

Claims 1-22 are pending. Claims 1 and 20 are independent. The remaining claims depend, directly or indirectly, from claims 1 and 20.

Rejection(s) under 35 U.S.C. § 103(a)

Claims 1-15 and 19-21

Claims 1-15 and 19-21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,091,067 ("Drobot") in view of U.S. Patent No. 6,154,305 ("Dickensheets"). This rejection is respectfully traversed as follows.

Section 2143.03 of the M.P.E.P. requires consideration of every claim feature in an obviousness determination. The asserted combination of references must teach or suggest each and every claim feature. *See In re Royka*, 490 F.2d 981 (CCPA 1974); *In re Saether*, 492 F.2d 849, 852 (CCPA 1974). The Board of Patent Appeal and Interferences has recently confirmed that a proper obviousness determination requires that an Examiner make "a searching comparison of the claimed invention – including all its limitations – with the teaching of the prior art." *See In re Wada and Murphy*, Appeal 2007-3733 (BPAI 2008) (citing *In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995)). This rational was recently supported by the Supreme Court holding that "there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR Int'l v. Teleflex Inc.*, 127 S.Ct. 1727, 1741 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). This line of reasoning was further expanded upon by the Board of Patent Appeals and Interferences noting that when a

reference is silent to an element, "it becomes incumbent upon the Examiner to provide a basis in fact...that would support a finding [of the claim element being present]." *Ex Parte Sternby*, Appeal 2009-007462 (June 8, 2010) (non-precedential). Applicant asserts that the Examiner has failed to meet the requirements for producing a *prima facie* case of obviousness, for at least the following reasons.

The independent claims require, in part, a miniature optical head less than or equal to 3 mm in diameter and total length of approximately 30 mm and a scanning mechanism for scanning said excitation point so as to describe a field of view *on the order of 150 x 150 mic.* According to critical objectives of the claimed invention, the optical head must be able to be miniaturized (not exceeding 3 mm in diameter in total), to make it possible to produce an image in real time (at least 10 images/second) to cover a field to be imaged of the order of 100 x 100 mic *minimum*, and preferably 150 x 150 mic. Applicants assert that neither Drobot nor Dickensheets disclose a miniature optical head that provides for such a broad field of view.

Turning to the rejection, as admitted by the Examiner, Drobot fails to disclose or render obvious the miniature nature of the confocal microscope for use with an endoscope comprising both rapid and slow column scanning devices. *See* Office Action, p. 3. In addition, Drobot is completely silent with respect to a scanning mechanism for scanning an excitation point for describing a field of view on the order of 150 x 150. In fact, as Drobot does not disclose a miniature confocal system at all, it logically follows that Drobot cannot possibly provide the combination of a miniature optical head and a broad field of view, as required by the claimed invention.

Further, Dickensheets fails to provide that which Drobot lacks. Dickensheets discloses a single mode optical fiber 13 with a diameter of 125 μm, which appears to be akin to the optical head of claim 1. *See* Dickensheets, col.6 ll.31-32. The largest field of view obtained using the

125 μm diameter optical fiber of Dickensheets is 80×60 μm, which is well below the minimum achieved by the claimed invention. *See* Dickensheets, col.6 ll.51-52. Factual evidence to support that the claimed miniature dimension range of the optical head improves the size of the field of view may be found, for example, at least in paragraphs [0049] and [0070] of the published application. Accordingly, the claimed invention is patentable over Dickensheets because the above limitation recites a critical claimed range that is an essential characteristic of the invention. *See* MPEP § 2144.05, ¶ III ("Applicants can rebut a *prima facie* case of obviousness based on overlapping ranges by showing the criticality of the claimed range."). As described above, the miniature optical head makes it possible to produce an image in real time (at least 10 images/second) to cover a field to be imaged of the order of 100 x 100 mic *minimum*, and preferably 150 x 150 mic, as claimed.

Further, the combination of Drobot and Dickensheets, taken as a whole, would provide a bimorph/fiber element 80 of Drobot with somewhat miniature dimensions, i.e., optical fiber 13 with a diameter of 125 μm as disclosed in Dickensheets. However, the field of view for such a confocal system obtained by combining Drobot and Dickensheets would still be on the order of 80×60 μm, which is considerably below the 150 x 150 mic field of view of the claimed invention. Accordingly, one of ordinary skill, using common sense, would not look to the combination of Drobot and Dickensheets to achieve the claimed invention.

In view of the above, it is clear that the Examiner's contentions fail to support an obviousness rejection of the independent claims. Pending dependent claims are patentable for a least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

Claims 17-18

Claims 17-18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Drobot in view of Dickensheets and U.S. Patent Publication No. 2003/0076571 ("MacAulay"). This rejection is respectfully traversed as follows.

As described above, both Drobot and Dickensheets fail to render the claimed invention obvious. Further, MacAulay fails to provide that which Drobot and Dicketsheets lack. Specifically, MacAulay fails to disclose or render obvious an optical head with a diameter of 3mm and a length of 30mm in a confocol microscope/endoscopic device that provides a field of view on the order of 150 x 150 mic. MacAulay merely discloses a system whereby fluid matching at a light window is performed to carry out index matching at the target region in an endoscopy procedure. *See* MacAulay, paragraphs [0100]-[0101].

Furthermore, the combination of Drobot, Dickensheets, and MacAulay, taken as a whole, does not render obvious a miniature confocol microscope/endoscopic device that provides such a broad field of view. That is, one or ordinary skill would not modify Drobot and Dickensheets with the index matching system of MacAulay to achieve a broad field of view, *i.e.*, on the order of 150 x 150 mic.

In view of the above, it is clear that the independent claims are patentable over Drobot Dickensheets, and MacAulay, whether taken separately or in combination. Dependent claims 17-18 are patentable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

Claims 16 and 22

Claims 16 and 22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Drobot in view of Dickensheets and U.S. Patent No. 6,640,124 ("Elsner"). This rejection is respectfully traversed as follows.

As described above, both Drobot and Dickensheets fail to render the amended independent claims obvious. Further, Elsner fails to provide that which Drobot and Dicketsheets lack. Specifically, Elsner fails to disclose or render obvious an optical head with a diameter of 3mm and a length of 30mm in a confocol microscope/endoscopic device which provides a field of view on the order of 150 x 150 mic. Elsner merely discloses a VCSEL type point source for use with a confocal microsope device. *See* Elsner, col.6 ll.45 – col.7 ll.30.

Furthermore, the combination of Drobot, Dickensheets, and Elsner, taken as a whole, does not render obvious a miniature confocol microscope/endoscopic device that provides such a broad field of view. That is, one or ordinary skill would not modify Drobot and Dickensheets with the confocal microsope device of Elsner to achieve a field of view on the order of 150 x 150 mic.

In view of the above, it is clear that the independent claims are patentable over Drobot Dickensheets, and Elsner, whether taken separately or in combination. Dependent claims 16 and 22 are patentable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

Conclusion

Applicant believes this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 17452/016001).

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